Simultaneous Localization and Mapping for 3D Reconstruction and Camera Pose Estimation

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Message from the Guest Editor

Simultaneous localization and mapping (SLAM) constructs a map of the surrounding world using data collected by the platform operating SLAM system and simultaneously localizes itself within the map. SLAM plays an important role in the computer vision and robotics field.The sensors used by the platform to observe the outside world can be various, such as monocular cameras, stereo cameras, RGB-D cameras, and lidar. These sensors can be divided into visual SLAM, lidar SLAM, multisensor fusion SLAM, and so on depending on the type of sensor. With the development of deep learning, semantic SLAM has been attracting increasing attention, especially in challenging environments, such as dynamic environments. Contributions addressing state-of-the-art developments and methodologies, as well as applications of simultaneous localization and mapping (SLAM) and perspectives on the future, are all welcomed.

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Special Issue

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